

to the satisfaction of the Officer in Charge, Marine Inspection. Minor repairs, alterations, and replacements may be permitted to the same standards as the original installations. However, all new installations or major replacements must meet the applicable requirements in this subpart for new installations.

(c) Vessels must comply with the general requirements of § 193.10-5 (c) through (g), § 193.10-10 (d) through (m), and § 193.10-15 insofar as is reasonable and practicable.

(d) Each firehose nozzle must meet § 193.10-10(i), and each low-velocity water spray applicator must meet § 193.10-10(j).

[CGD 95-027, 61 FR 26013, May 23, 1996]

Subpart 193.15—Carbon Dioxide Extinguishing Systems, Details

§ 193.15-1 Application.

(a) The provisions of this subpart shall apply to all new installations contracted for on or after March 1, 1968.

(b) Installations contracted for prior to March 1, 1968, shall meet the requirements of § 193.15-90.

(c) The requirements of this subpart are based on a "high pressure system," i.e., one in which the carbon dioxide is stored in liquid form at atmospheric temperature. Details for "low pressure systems," i.e., those in which the carbon dioxide is stored in liquid form at a continuously controlled low temperature, may be specifically approved by the Commandant where it is demonstrated that a comparable degree of safety and fire extinguishing ability is achieved.

§ 193.15-5 Quantity, pipe sizes, and discharge rates.

(a) *General.* The amount of carbon dioxide required for each space shall be as determined by paragraphs (b) through (d) of this section.

(b) *Total available supply.* A separate supply of carbon dioxide need not be provided for each space protected. The total available supply shall be at least sufficient for the space requiring the greatest amount.

(c) *Enclosed ventilation systems for rotating electrical propulsion equipment.* (1) The number of pounds of carbon dioxide required for the initial charge shall be equal to the gross volume of the system divided by 10 for systems having a volume of less than 2,000 cubic feet, and divided by 12 for systems having a volume of 2,000 cubic feet or more.

(2) In addition to the amount required by paragraph (c)(1) of this section there shall be sufficient carbon dioxide available to permit delayed discharges of such quantity as to maintain at least a 25-percent concentration until the equipment can be stopped. If the initial discharge is such as to achieve this concentration until the equipment is stopped, no delayed discharge need be provided.

(3) The piping for the delayed discharge shall not be less than ½-inch standard pipe, and no specific discharge rate need be applied to such systems. On small systems, this pipe may be incorporated with the initial discharge piping.

(4) The piping for the initial charge shall be in accordance with Table 193.15-5(d)(4), and the discharge of the required amount shall be completed within 2 minutes.

(d) *Machinery spaces, paint lockers, tanks, chemical storerooms, and similar spaces.* (1) Except as provided in paragraph (d)(3) of this section, the number of pounds of carbon dioxide required for each space shall be equal to the gross volume of the space divided by the appropriate factor noted in Table 193.15-5(d)(1). If fuel can drain from the compartment being protected to an adjacent compartment, or if the compartments are not entirely separate, the requirements for both compartments shall be used to determine the amount of carbon dioxide to be provided. The carbon dioxide shall be arranged to discharge into both such compartments simultaneously.

TABLE 193.15-5(d)(1)
[Gross volume of compartment, cubic feet]

| Over | Not over | Factor |
|--------------|----------|--------|
| | 500 | 15 |
| 500 | 1,600 | 16 |
| 1,600 | 4,500 | 18 |
| 4,500 | 50,000 | 20 |
| 50,000 | | 22 |